

Screening for Brain Injury

Data, Tools and Implications for treatment
planning

Iowa
Association of
Community
Providers



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Impact of brain injury

- The Centers for Disease Control and Prevention estimates that 50,000-55,000 Iowans have significant long-term disability from brain injury. As part of *Coming Into Focus*, Hoyt-Mack Research Associates found that of those surveyed:
 - 81 percent reported one or more physical impairments;
 - 92 percent reported memory difficulties;
 - 64 percent reported problems in organizing daily activities;
 - 75 percent reported difficulty making decisions;
 - 76 percent reported emotional/behavioral difficulties; and
 - 84 percent reported learning difficulties.

Brain Injury in Iowa's Corrections System

- IDOC has been screening people since July of 2009
- Utilizing Iowa Brain Injury Screening Tool
- From July 2009-2013 of all substance abuse screens performed:
 - 35-40% positive for further screening for brain injury
 - Data collection and analysis is in early stages

Prevalence of Brain Injury in lowan' s utilizing mental health and substance abuse services

- Study conducted by the University of Iowa (2005)
- Researcher utilized hybrid screening tool, “The Iowa Head Injury Screening Instrument.”
- Tool assessed for presence of brain injury and impact of injury, support services utilized and sources of funding
- Voluntary screening over a 2 week period

Prevalence of Brain Injury in lowan' s utilizing mental health and substance abuse services

- Out of 152 participants in both settings 89 (58.6%) self reported experiencing brain injury.
- Respondents reported the following
 - 82% reported difficulties in one or more area
 - 56% reported memory difficulties
 - 46% reported experiencing headaches
 - 46% reported experiencing depression
 - 45% reported difficulties concentrating
 - 43% reported feeling anxious

Screening tools

- Iowa Head Injury Screening Tool
- Brief Screening tool for Brain Injury
- HELPS Brain Injury Screening Tool
- TBIQ

IOWA BRAIN INJURY SCREENING INSTRUMENT

This questionnaire is about head and/or brain injuries. It asks about blows to the head and/or other injuries that may have caused short or long-term difficulties for the person who experienced the injury. An injury of this type may or may not have resulted in a loss of consciousness. Those injuries that would be considered minor bumps to the head should not be recorded.

1) Date of Interview ____/____/____ 2) Age ____ 3) Sex ____

4) Race: ____ Black or African American ____ White
____ Asian ____ Alaska Native
____ Hispanic or Latino ____ Native Hawaiian or other Pacific
Islander
____ American Indian ____ Other (specify) ____

5) Have you ever experienced a head and/or brain injury from: (for each category, indicate the number of times and the year(s) that the person reports experiencing an injury from this type of event)

<u>Event</u>	<u>Number</u>	<u>Year</u>		
(i.e. automobile crash	<u>2</u>	<u>'97 and '01</u>	i.e. gunshot wound	<u>N/A</u>
_____)				
automobile crash _____	_____		gunshot wound _____	_____
motorcycle crash _____	_____		assault/abuse/fighting _____	_____
all-terrain vehicle (ATV) _____	_____		trip/fall _____	_____

bicycle crash _____	_____		near drowning _____	_____

sports injury _____	_____		other _____	_____

IF the person reports never having a head and/or brain injury in question #5, STOP HERE;

IF only one injury is reported in Question #5, SKIP Question #6 and continue to Question #7,

OR

IF multiple injuries are reported in question #5, please calculate the total number of injuries to be used for Question #6.

INSTRUCTIONS FOR USE OF THE HELPS BRAIN INJURY SCREENING TOOL

Purpose

Traumatic Brain Injury (TBI) is a common problem. Persons with TBI may have difficulty with or impairments in: memory, judgment, concentration, head pain, organization, task initiation and completion, among other things. Consequently, they may be unable to hold a job, live independently, accomplish tasks of daily living. Many person with TBI might be undiagnosed. In order to evaluate service eligibility and make the appropriate referrals, the source of disability must be identified. The TBI screening tool is a first step towards identifying and properly diagnosing TBI.

Definition of Traumatic Brain Injury

An injury caused by external trauma to the head or violent movement of the head, such as: from a fall, car crash or being shaken. TBI may or may not be combined with loss of consciousness, and open wound or skull fracture.

Who Should Be Screened

- A consumer with a known trauma that could have caused a brain injury; or
- A consumer having difficulties functions, or exhibiting unexplained behaviors.

Consumer Information: _____

Agency/Screeners's Information: _____

Screening Questions:

H Have you ever **Hit** your **Head** or been **Hit** on the **Head**? ☐ Yes ☐ No

Note: Prompt client to think about all incidents that may have occurred at any age, even those that did not seem serious: vehicle accidents, falls, assault, abuse, sports, etc. Screen for domestic violence and child abuse, and also for service related injuries. A TBI can also occur from violent shaking of the head, such as whiplash or being shaken as a baby or child.

E Were you ever seen in the **Emergency** room, hospital, or by a doctor because of an injury to your head? ☐ Yes ☐ No
Note: Many people are seen for treatment. However, there are those who cannot afford treatment, or who do not think they require medical attention.

L Did you ever **Lose** consciousness or experience a period of being dazed and confused? ☐ Yes ☐ No

- ☐ headaches
- ☐ dizziness
- ☐ anxiety
- ☐ depression
- ☐ difficulty concentrating
- ☐ difficulty remembering

- ☐ difficulty reading, writing, calculating
- ☐ poor problem solving
- ☐ difficulty performing your job/school work
- ☐ change in relationships with others
- ☐ poor judgment (being fired from job, arrests, fights)

Note: While significant in helping to determine the extent of the injury, many people with minor brain injury may not lose consciousness, yet still have difficulties as a result of their injury. People with TBI may not lose consciousness but experience an "alteration of consciousness." This may include feeling dazed, confused, or disoriented at the time of the injury, or being unable to remember the events surrounding the injury.

P Do you experience any of these **Problems** in your daily life since you hit your head? ☐ Yes ☐ No

Note: Ask your client if s/he experiences any of the following problems, and ask when the problem presented. You are looking for a combination of two or more problems that were not present prior to the injury. Other problems may include: visual, auditory, sensory impairments, paralysis, weakness of any extremity, balance problems, fatigue, apathy, epilepsy, silliness, impulsivity, mood swings, irritability, decreased self-awareness, decreased ability to learn new information or retrieve old information, shift from one topic to another, set goals or plan tasks, monitor own behavior and difficulty with abstract thinking.

S Any significant **Sicknesses**? ☐ Yes ☐ No

Note: Traumatic brain injury implies a physical blow to the head, but acquired brain injury may also be caused by medical conditions, such as: brain tumor, meningitis, West Nile virus, stroke, seizures. Also screen for instances of oxygen deprivation such as following a heart attack, carbon monoxide poisoning, near drowning, or near suffocation.

Scoring the HELPS Screening Tool

A HELPS screening is considered positive for a *possible* TBI when the following **3** items are identified:

- 1.) An event that could have caused a brain injury (yes to **H**, **E** or **S**), **and**
- 2.) A period of loss of consciousness or of being dazed and confused (yes to **L** or **E**), **and**
- 3.) The presence of two or more chronic problems listed under **P** that were not present before the injury.

Note: Positive answers to these questions are not sufficient to suggest the presence of a brain injury. It is recommended that positive responses be placed within the context of the person's self-report and documentation of altered behavioral and/or cognitive functioning. This information along with your judgment can be used as a basis for further inquiry, e.g. referral to a physician, further evaluation, clinical observations, etc.

Brief TBI Screening

Name _____

Date _____

Date of Birth: _____

Sex: M F

Interviewer's Name _____

For the Interviewer

You are trying to determine if a trauma or injury to the brain has possibly occurred. A positive response would be identified by a blow to the head, a fall, etc., which resulted in loss of consciousness. Be sure to ask about visible scars or marks. Greater than momentary loss of consciousness is felt to be a significant injury, although multiple mild injuries such as those incurred in assaults or from abuse can also have additive effects over time without significant loss of consciousness. To get an indication of any history of a traumatic brain injury ask the following questions:

1. Have you ever been injured following a blow to your head?

☐ Yes
☐ No

If yes, when was this? _____

2. Have you ever been hospitalized or treated in an emergency room following an injury?

☐ Yes
☐ No

If yes, when were you hospitalized or treated? _____

3. Have you ever been unconscious following an accident or injury?

☐ Yes
☐ No

If yes, for how long? _____

4. Have you ever been injured in a fight?

☐ Yes
☐ No

5. Have you ever been injured by a spouse or a family member?

☐ Yes
☐ No

6. Have you ever had any Major surgeries?

☐ Yes
☐ No

If yes, list them _____

TBIQ (rev 10/02/2006)**Section I – Screening**

Ask questions below to help jog the participant's memory. Jot answers beside each question and record the number of times. We are looking for mechanical induced brain injury rather than chemical. If the participant answers "yes" to any event, ensure that it involved a head injury and record the number of times the incident occurred in column labeled F (frequency). Record the details of relevant events (brain injury) in Section II. **If the number of times provided for a specific injury type is > 5, record an estimate in column F and on the next page probe for 3 or 4 of the most severe instances of this type of injury.**

F

At any time in your life, did you hit your head or was your head hit during any of the following? This includes severe blows to the face.	# times
Vehicle Accidents:	
1. A car wreck?	
2. A motorcycle wreck?	
3. A bicycle accident?	
Falls:	
4. A fall over 10 feet?	
5. A fall of unknown height?	
Sports:	
6. Any sports event?	
Assaults:	
7. Any assault on you (including severe discipline or domestic violence)?	
8. Have you ever been shaken really hard? (include airbag trauma if seriously shaken when it inflated)	
9. Any other situation in which your head was injured? (such as fights)	
Other Instances of Head Injury:	
10. Have you ever been shot in the head?	
11. Any other event in which you received head trauma?	
12. During any time in your life, have you ever had any loss of consciousness or been dazed ("seen stars", "bells ringing")? This could have been due to sickness, seizure, or any cause other than a head injury (if "yes" ask #13) (do not count in total if it refers to any injury counted in #1 to #11)	
13. (ask only if # 12 is yes) When you came to, did you have any evidence of a head injury that might have resulted from falling when you lost consciousness (bumps, bruises or cuts on your head)?	
Total number of separate critical events	

Iowa Administrative code (441.83.81)

Malignant neoplasms of brain, cerebrum.

Malignant neoplasms of brain, frontal lobe.

Malignant neoplasms of brain, temporal lobe.

Malignant neoplasms of brain, parietal lobe.

Malignant neoplasms of brain, occipital lobe.

Malignant neoplasms of brain, ventricles.

Malignant neoplasms of brain, cerebellum.

Malignant neoplasms of brain, brain stem.

Malignant neoplasms of brain, other part of brain, includes midbrain, peduncle, and medulla

oblongata.

Malignant neoplasms of brain, cerebral meninges.

Malignant neoplasms of brain, cranial nerves.

Secondary malignant neoplasm of

brain.

Secondary malignant neoplasm of other parts of the nervous system, includes cerebral meninges. Benign neoplasm of brain and other parts of the nervous system, brain.

Benign neoplasm of brain and other parts of the nervous system, cranial nerves.

Benign neoplasm of brain and other parts of the nervous system, cerebral meninges. Encephalitis, myelitis and encephalomyelitis.

Intracranial and intraspinal abscess.

Anoxic brain damage.

Subarachnoid hemorrhage.

Intracerebral hemorrhage.

Other and unspecified intracranial hemorrhage. Occlusion and stenosis of precerebral arteries. Occlusion of cerebral arteries.

Transient cerebral ischemia.

Acute, but ill-defined, cerebrovascular disease.

Other and ill-defined

cerebrovascular diseases.

Fracture of vault of skull.

Fracture of base of skull.

Other and unqualified skull fractures.

Multiple fractures involving skull or face with other bones. Concussion.

Cerebral laceration and contusion.

Subarachnoid, subdural, and extradural hemorrhage following

injury. Other and unspecified intracranial hemorrhage following

injury. Intracranial injury of other and unspecified nature.

Poisoning by drugs, medicinal and biological substances.

Toxic effects of substances.

Effects of external causes.

Drowning and nonfatal submersion.

Asphyxiation and strangulation.

Child maltreatment syndrome.

Adult maltreatment syndrome.

What we might miss?

- Acquired injuries
- Domestic Violence
- Blast injuries
- Birth injuries
- Anoxia
- Hypoxia



Treatment Planning

Major Functional Adaptability Inventory

Muriel D. Lezak, PhD, ABPP & James F. Malec, PhD, ABPP

Name: _____ Clinic # _____ Date _____

Person reporting (circle one): Single Professional Professional Consensus Person with brain injury Significant other: _____

Below each item, circle the number that best describes the level at which the person being evaluated experiences problems. Mark the greatest level of problem that is appropriate. Problems that interfere rarely with daily or valued activities, that is, less than 5% of the time, should be considered not to interfere. Write comments about specific items at the end of the rating scale.

For Items 1-20, please use the rating scale below.

0 None	1 Mild problem but does not interfere with activities; may use assistive device or medication	2 Mild problem: interferes with activities 5-24% of the time	3 Moderate problem: interferes with activities 25-75% of the time	4 Severe problem: interferes with activities more than 75% of the time
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Part A. Abilities
1. Mobility: Problems walking or moving; balance problems that interfere with moving about 0 1 2 3 4
2. Use of hands: Impaired strength or coordination in one or both hands 0 1 2 3 4
3. Vision: Problems seeing; double vision; eye, brain, or nerve injuries that interfere with seeing 0 1 2 3 4
4. *Audition: Problems hearing; ringing in the ears 0 1 2 3 4
5. Dizziness: Feeling unsteady, dizzy, light-headed 0 1 2 3 4
6. Motor speech: Abnormal clearness or rate of speech; stuttering 0 1 2 3 4
7A. Verbal communication: Problems expressing or understanding language 0 1 2 3 4
7B. Nonverbal communication: Restricted or unusual gestures or facial expressions; talking too much or not enough; missing nonverbal cues from others 0 1 2 3 4
8. Attention/Concentration: Problems ignoring distractions, shifting attention, keeping more than one thing in mind at a time 0 1 2 3 4
9. Memory: Problems learning and recalling new information 0 1 2 3 4
10. Fund of Information: Problems remembering information learned in school or on the job; difficulty remembering information about self and family from years ago 0 1 2 3 4
11. Novel problem-solving: Problems thinking up solutions or picking the best solution to new problems 0 1 2 3 4
12. Visuospatial abilities: Problems drawing, assembling things, route-finding, being visually aware on both the left and right sides 0 1 2 3 4

Part B. Adjustment
13. Anxiety: Tense, nervous, fearful, phobias, nightmares, flashbacks of stressful events 0 1 2 3 4
14. Depression: Sad, blue, hopeless, poor appetite, poor sleep, worry, self-criticism 0 1 2 3 4
15. Irritability, anger, aggression: Verbal or physical expressions of anger 0 1 2 3 4
16. *Pain and headache: Verbal and nonverbal expressions of pain; activities limited by pain 0 1 2 3 4
17. Fatigue: Feeling tired; lack of energy; tiring easily 0 1 2 3 4
18. Sensitivity to mild symptoms: Focusing on thinking, physical or emotional problems attributed to brain injury; rate only how concern or worry about these symptoms affects current functioning over and above the effects of the symptoms themselves 0 1 2 3 4
19. Inappropriate social interaction: Acting childish, silly, rude, behavior not fitting for time and place 0 1 2 3 4
20. Impaired self-awareness: Lack of recognition of personal limitations and disabilities and how they interfere with everyday activities and work or school 0 1 2 3 4

Use scale at the bottom of the page to rate item #21

21. Family/significant relationships: Interactions with close others; describe stress within the family or those closest to the person with brain injury; "family functioning" means cooperating to accomplish those tasks that need to be done to keep the household running
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0 Normal stress within family or other close network of relationships	1 Mild stress that does not interfere with family functioning	2 Mild stress that interferes with family functioning 5-24% of the time	3 Moderate stress that interferes with family functioning 25-75% of the time	4 Severe stress that interferes with family functioning more than 75% of the time
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Questions

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